and remained satisfied with the amount of information presented (figures 3 and 4). Unfortunately, rounds frequently exceeded the allotted time, increasing from 37% to 50% (N=7, 6, 10) (figure 5).

Conclusions Hybridization of FCR to include formal presentations resulted in 55% more residents agreeing that FCR provided the best educational experience, while preserving family

1. NEEDS ASSESSMENT:

Abstract 4 Figure 1 Needs assessment: faculty and resident perceived barriers to education on FCR prior to QI project initiation

2. OUTCOME MEASURE:

Abstract 4 Figure 2 Outcome measure: resident perception of FCR educational experience

3. BALANCING MEASURES:

Abstract 4 Figure 3 Balancing measure: parental comprehension of diagnosis, plan, and discharge criteria

Abstract 4 Figure 4 Balancing measure: parental satisfaction with FCR elements: number of people in the patient's room (during the COVID-19 pandemic) and the amount of information shared during FCR

Abstract 4 Figure 5 Balancing measure: percentage of hospitalist rounds exceeding allotted time

satisfaction and comprehension. Results may be generalizable to similarly sized residency programs. Future interventions will target barriers and negatively impacted educational activities identified upon re-evaluation of the new FCR structure.

5

REDUCING ACUTE HOSPITALIZATION LENGTH OF STAY AFTER TOTAL KNEE ARTHROPLASTY: A QUALITY IMPROVEMENT STUDY

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Background The introduction of bundled funding for total knee arthroplasty (TKA) has motivated hospitals to improve the quality of care while minimizing costs. We identified LOS and the percentage of patients discharged to inpatient rehabilitation for primary TKA patients as potential targets for reducing costs, improving the quality of patient care, and ultimately improving our performance within the bundled payment model.

Objectives The aim of our quality improvement project was to reduce the acute hospitalization length of stay (LOS) to less than two days and decrease the percentage of TKA patients discharged to inpatient rehabilitation using an enhanced recovery after surgery (ERAS) bundle.

Methods This study used a before-and-after design. The pre-intervention period was January – December 2017 and the post-intervention period was January 2018 – August 2019. A

root (figure 1) cause analysis (RCA) was performed by a multidisciplinary team to identify barriers for rapid recovery and discharge. Four new interventions were chosen as part of an improvement bundle based on existing local practices, literature review, and feasibility analysis: 1) perioperative placement of peripheral nerve block; 2) prophylactic antiemetic medication; 3) avoidance of routine pre-operative urinary

catheterization; and 4) pre-operative patient education regarding surgical recovery.

Results The pre- and post-intervention groups included 232 and 383 patients, respectively (table 1). Mean LOS decreased from 2.82 to 2.13 days ($P<0.001$) (table 2). The need for inpatient rehabilitation decreased by 10% ($p=0.002$). Mean 24-hour oral morphine consumption decreased by 37%

Abstract 5 Figure 1 Fishbone diagram to identify root causes for increased length of stay

- Impact of adductor canal block on 24 hour opioid consumption
- Impact of IV dexamethasone on PONV
- Rates of bladder catheterization
- Rates of 30-day emergency department visits

Abstract 5 Figure 2 Run charts

Abstract 5 Figure 3 Statistical process control chart for acute hospitalization length of stay

Abstract 5 Table 1 Characteristics of patients undergoing TKA

	Pre-ERAS Group		ERAS bundle		p value
Number of patients	232		383		
Age, year (mean, (SD))	66.1	(10.1)	66.5	(9.9)	0.466
Female, n	148	(63.8%)	228	(59.5%)	0.334
ASA classification					0.090
ASA I	4	(1.7%)	5	(1.3%)	
ASA II	97	(41.8%)	123	(32.1%)	
ASA III	126	(54.4%)	243	(63.4%)	
ASA IV	5	(2.2%)	12	(3.1%)	
BMI, kg/m ² (mean, (SD))	31.0	(7.0)	32.45	(7.83)	0.023
Neuraxial anaesthetic	199	(85.8%)	329	(85.9%)	1.000

TKA = total knee arthroplasty, ERAS = enhanced recovery after surgery, ASA = American Society of Anesthesiologists, BMI = body mass index

Abstract 5 Table 2 Interrupted time series analysis (ITS) used to model monthly LOS and percent discharged to inpatient rehabilitation

Outcome	Final Month of Pre-Intervention	Final Month of Post-Intervention	Difference	Wald p value
LOS (days)	2.60 [2.30, 2.90]	1.81 [1.59, 2.03]	-0.79 [-1.16, -0.42]	< 0.001
LOS < 2 Days	18.3% [9.0, 27.8]	69.3% [62.4, 76.1]	50.9% [39.3, 62.6]	< 0.001
Discharge to Rehabilitation	19.9% [10.7, 29.1]	8.2% [1.4, 14.9]	-11.7% [-23.1, -0.3]	0.045

LOS = length of stay

Abstract 5 Table 3 Outcome, process, and balance measures

	Pre ERAS Bundle		ERAS Bundle		P value
Number of patients	282		383		
Hospitalization LOS, days (mean, (SD))	2.82	(1.25)	2.13	(1.09)	< 0.001
Inpatient rehabilitation	47	(20.2%)	41	(10.7%)	0.002
24-hour oral morphine, mg (mean, (SD))	59.7	(76.41)	38.05	(52.42)	< 0.001
Maximum VRS pain score first 24 hours					< 0.001
No pain	8	(3.6%)	47	(12.7%)	
Mild	54	(24.2%)	148	(40.1%)	
Moderate	97	(43.5%)	113	(30.6%)	
Severe	64	(28.7%)	61	(16.5%)	
Post-operative Nausea and Vomiting	120	(51.7%)	140	(36.6%)	< 0.001
Adductor Canal Block	35	(15%)	250	(65%)	< 0.001
IV dexamethasone	49	(21%)	244	(64%)	< 0.001
Foley Catheterization					
Pre-operative	221	(95.3%)	61	(15.9%)	< 0.001
Post-operative	4	(1.7%)	78	(20.4%)	< 0.001
Post discharge 30-day ED visits	30	(12.9%)	28	(7.3%)	0.030

ERAS = enhanced recovery after surgery, LOS = length of stay, VRS = verbal rating scale, IV = intravenous, ED = emergency department

($p < 0.001$). The percentage of patients experiencing moderate-to-severe pain and postoperative nausea and vomiting within the first 24-hours decreased by 25% and 15%, respectively ($p < 0.001$). 30-day emergency department visits following discharge decreased by 5% ($p = 0.030$) (table 3, figures 2 and 3). **Conclusions** Significant improvements in the recovery of patients after TKA were achieved by performing a RCA and implementing a multi-disciplinary, patient-centered ERAS bundle.

6 REDUCING UNNECESSARY PATIENT ISOLATION ON GENERAL MEDICINE UNITS

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Background Droplet+contact (DC) precautions are used to prevent the spread of acute respiratory infections. Clinicians at London Health Sciences Centre, an academic tertiary care organization in Ontario, Canada, have reported that many patients remain isolated longer than necessary. Research suggests that prolonged isolation may negatively impact patient outcomes, experience, and costs.

Objectives Reduce unnecessary DC precautions on general medicine units by 30% by March 31, 2020.

ISOLATION PROJECT: APPENDIX

Abstract 6 Figure 1 Current state process map